

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-21 are pending in the application, with claims 1, 14, and 18 being the independent claims. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 112

Claim 18 stands rejected under 35 U.S.C. § 112, second paragraph, for allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. Applicants respectfully traverse the rejection and provide the following arguments to support patentability.

The Office Action dated December 28, 2007 (herein "Office Action") alleges it is unclear "as to whether the [Applicants intend] for the MAC to decrypt the data received from the host computer or encrypt the transmit packet data from the data network." (*see*, Office Action, Page 2).

A feature of claim 18 recites "a host computer coupled to a data network for receiving data packets from a ***data network*** and processing Data Over Cable Service Interface Specification (DOCSIS) management packets." (*see*, claim 18). Another feature of claim 18 recites "a demodulator/Media Access Control (MAC) card coupled to the host processor." (*see*, claim 18). The demodulator/MAC card includes "a DOCSIS

MAC coupled to the host computer for encrypting transmit packet data from the data network." (*see*, claim 18). In other words, according to Applicants' Specification, "[t]ransmit packet data arrives at the [satellite modem termination system (SMTS)] module." (*see*, Applicants' Specification, para. [0032]). The transmit packet data, along with MAC management messages, are moved from host memory to the MAC. (*see*, Applicants' Specification, para. [0032]). The MAC 310 "encrypts the data as necessary" to produce the transmit packet data. (*see*, Applicants' Specification, para. [0032]). Hence, claim 18 recites that DOCSIS MAC encrypts transmit packet data from ***the data network*** that is to be modulated by "a satellite modulator coupled to the demodulator/MAC card." (*see*, claim 18). Accordingly, Applicants respectfully request the rejection to claim 18 under 35 U.S.C. § 112, second paragraph, be reconsidered and withdrawn.

Rejections under 35 U.S.C. § 103

Fielding in view of Brooks and in view of Alessi

Claims 1-3 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over United States Patent No. 6,097,706 to Fielding et al. (herein "Fielding") in view of United States Patent Publication No. 2001/0039600 to Brooks et al. (herein "Brooks") and in view of "Adapting the DOCSIS Protocols for Military Point to Multipoint Wireless Links" to Alessi et al. (herein "Alessi"). Applicants respectfully traverse the rejection and provide the following arguments to support patentability.

The Office Action unequivocally states that Fielding "fails to disclose components of the satellite modem." (*see*, Office Action, Page 3). However, the Office

Action alleges that the combination of Brooks and Alessi provides the missing teachings or suggestions with respect to claim 1. For the reasons to be discussed below, the combination of Brooks and Alessi does not teach or suggest each and every feature of claim 1. For example, the combination of Brooks and Alessi does not teach or suggest at least the feature of "a turbo decoder coupled to the burst demodulator and the DOCSIS MAC for decoding demodulated data from the burst demodulator and sending decoded data to the DOCSIS MAC, wherein the DOCSIS MAC sends DOCSIS management packets portion of the decoded data to the host processor and sends transmit packet data portion of the decoded data to the at least one data network" as recited by claim 1. Fielding does not provide the missing teachings or suggestions with respect to claim 1, nor does the Office Action allege that Fielding provides the missing teachings or suggestions with respect to claim 1 to render claim 1 obvious. Therefore, the Office Action fails to disclose a *prima facie* case of obviousness.

A cable modem of Brooks "utilizes the Advanced System Bus (ASB 210) and Advanced Peripheral Bus (APB 214) protocol and bus architecture as specified in the Advanced Microcontroller Bus Architecture (AMBA) specification." (see, Brooks, para. [0032]). The "ASB 210 is the bus on which the first and second processors 102 and 104, RAM memory 106, and other direct memory access (DMA) devices reside." (see, Brooks, para. [0034]). According to Brooks,

[a]n ASB arbiter 218 determines which ASB master has access to the ASB 210. In this embodiment, there are four ASB masters capable of requesting the ASB 210: the first processor 102, the second processor 104, [a] host interface 122, and [a] DMA controller 212.

(see, Brooks, para. [0039]).

The host interface 122 "supports a slave mode which provides an external host processor access to its internal memory, as well as memory-mapped register set." (*see*, Brooks, para. [0040]). An "ASB decoder 220 is also coupled to the ASB 210." (*see*, Brooks, para. [0041]). The ASB decoder 220 "decodes addresses on the ASB 210, and provides selection signals to each ASB slave." (*see*, Brooks, para. [0041]).

Alessi discloses "the use of [DOCSIS] in a military environment that uses Space Ground Link Interface Units (SGLIUs) to extend the DoD's terrestrial networks via multipoint radio communication channels." (*see*, Alessi, abstract). According to Alessi, some "modifications to DOCSIS may be necessary." (*see*, Alessi, abstract). For example, "DOCSIS currently uses Reed-Solomon coding, whereas military applications might prefer more powerful codes, such as Turbo Product Codes [(TPCs)]." (*see*, Alessi, abstract). TPCs "are iterative techniques that code data blocks as 2-D or 3-D matrices" (*see*, Alessi, Page 83, lines 29-30). TPCs "use simple coding schemes such as parity checks or Hamming codes along each axis of the matrix, so that each data bit has error correction coding covering it in two or three dimensions." (*see*, Alessi, Page 83, lines 30-34). Therefore, Alessi merely discloses a type of error correction code.

Hence, combining the ASB decoder 220 of Brooks with the TPC of Alessi at most teaches or suggests ***a decoder to decode addresses*** on an Advanced System Bus using Turbo Product Codes. Clearly, the aforementioned combination of Brooks and Alessi does not teach or suggest "***a turbo decoder coupled to the burst demodulator and the DOCSIS MAC for decoding demodulated data from the burst demodulator and sending decoded data to the DOCSIS MAC***" as recited by claim 1.

Further, it appears to the Applicant that the Examiner developed this argument after reading Applicants' instant specification, i.e., through hindsight. Thus, there is no motivation to apply the combination of Fielding, Brooks, and Alessi as done in the Office Action absent the use of impermissible hindsight by the Examiner. (*see, KSR v. Teleflex*, 550 U.S. ____ (2007) (stating that a "factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning."); *Interconnect Planning Corp. v. Feil*, 777 F.2d 1132, 227 U.S.P.Q 543 (Fed. Cir. 1985) (stating that when prior art references require selective combination to render obvious a subsequent invention, it is an error to reconstruct the patentee's claimed invention using the patentee's claims as a blueprint, there must be other motivation.); *In re Gorman*, 933 F.2d 982, 18 U.S.P.Q.2d 1885 (Fed. Cir. 1991) (stating it was impermissible to use applicant's structure as a template to select elements from a reference or references to fill in the gaps); *Para-Ordnance Manufacturing, Inc. v. SGS Importers International, Inc.*, 73 F.3d 1085, 1087, 37 U.S.P.Q.2d 1237, 1239 (Fed. Cir. 1995) ("Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor.")). Thus, the combination of Fielding, Brooks, and Alessi cannot be used to form a *prima facie* case of obviousness.

In summary, the combination of Fielding, Brooks, and Alessi does not teach or suggest each and every feature of claim 1 nor can the combination of Fielding, Brooks, and Alessi be used to form a *prima facie* case of obviousness. Therefore, the Office Action fails to disclose a *prima facie* case of obviousness. Dependent claims 2 and 3 are likewise not rendered obvious by the combination of Fielding, Brooks, and Alessi for the same reasons as claim 1 from which they respectively depend and further in view of their

own respective features. Accordingly, Applicants respectfully request that the rejection of claims 1-3 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Fielding in view of Brooks and in view of Alessi and in further view of Quigley

Claim 4 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fielding in view of Brooks and in view of Alessi and in further view of United States Patent No. 6,650,624 to Quigley et al. (herein "Quigley"). Applicants respectfully traverse the rejection and provide the following arguments to support patentability.

As discussed above, the combination of Fielding, Brooks, and Alessi does not teach or suggest each and every feature of claim 1. Quigley does not provide the missing teachings or suggestions with respect to claim 1 nor does the Office Action allege that Quigley provides the missing teachings or suggestions with respect to claim 1. Thus, the combination of the combination of Fielding, Brooks, Alessi, and Quigley does not render claim 1 obvious. Dependent claim 4 is likewise not rendered obvious by the combination of the combination of Fielding, Brooks, Alessi, and Quigley for the same reasons as claim 1 from which it respectively depends and further in view of its own respective features. Accordingly, Applicants respectfully request that the rejection of claim 4 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Fielding in view of Brooks and in view of Alessi and in further view of Schmidl

Claims 5 and 10 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fielding in view of Brooks and in view of Alessi and in further view of United States Patent Publication No. 2003/0206561 to Schmidl et al. (herein

"Schmidl"). Applicants respectfully traverse the rejection and provide the following arguments to support patentability.

As discussed above, the combination of Fielding, Brooks, and Alessi does not teach or suggest each and every feature of claim 1. Schmidl does not provide the missing teachings or suggestions with respect to claim 1 nor does the Office Action allege that Schmidl provides the missing teachings or suggestions with respect to claim 1. Thus, the combination of the combination of Fielding, Brooks, Alessi and Schmidl does not render claim 1 obvious. Dependent claims 5 and 10 is likewise not rendered obvious by the combination of the combination of Fielding, Brooks, Alessi and Schmidl for the same reasons as claim 1 from which they respectively depend and further in view of their own respective features. Accordingly, Applicants respectfully request that the rejection of claims 5 and 10 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Fielding in view of Brooks and in view of Alessi and in view of Quigley and in further view of Azenkot

Claim 6 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fielding in view of Brooks and in view of Alessi and in view of Quigley and in further view of United States Patent No. 7,050,419 to Azenkot et al. (herein "Azenkot"). Applicants respectfully traverse the rejection and provide the following arguments to support patentability.

As discussed above, the combination of Fielding, Brooks, Alessi, and Quigley does not teach or suggest each and every feature of claim 1. Azenkot does not provide the missing teachings or suggestions with respect to claim 1 nor does the Office Action

allege that Azenkot provides the missing teachings or suggestions with respect to claim

1. Thus, the combination of the combination of Fielding, Brooks, Alessi, Quigley, and Azenkot does not render claim 1 obvious. Dependent claim 6 is likewise not rendered obvious by the combination of the combination of Fielding, Brooks, Alessi, Quigley, and Azenkot for the same reasons as claim 1 from which it respectively depends and further in view of its own respective features. Accordingly, Applicants respectfully request that the rejection of claim 6 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Fielding in view of Brooks and in view of Alessi and in view of Schmidl and in further view of Geile

Claim 7 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fielding in view of Brooks and in view of Alessi and in view of Quigley and in further view of United States Patent No. 7,310,522 to Geile et al. (herein "Geile"). Applicants respectfully traverse the rejection and provide the following arguments to support patentability.

As discussed above, the combination of Fielding, Brooks, Alessi, and Quigley does not teach or suggest each and every feature of claim 1. Geile does not provide the missing teachings or suggestions with respect to claim 1 nor does the Office Action allege that Geile provides the missing teachings or suggestions with respect to claim 1. Thus, the combination of the combination of Fielding, Brooks, Alessi, Quigley, and Geile does not render claim 1 obvious. Dependent claim 7 is likewise not rendered obvious by the combination of the combination of Fielding, Brooks, Alessi, Quigley, and Geile for the same reasons as claim 1 from which it respectively depends and further in

view of its own respective features. Accordingly, Applicants respectfully request that the rejection of claim 7 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Fielding in view of Brooks and in view of Alessi and in view of Schmidl and in further view of Quigley

Claims 8 and 9 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fielding in view of Brooks and in view of Alessi and in view of Schmidl and in further view of Quigley. Applicants respectfully traverse the rejection and provide the following arguments to support patentability.

As discussed above, the combination of Fielding, Brooks, Alessi, and Schmidl does not teach or suggest each and every feature of claim 1. Quigley does not provide the missing teachings or suggestions with respect to claim 1 nor does the Office Action allege that Quigley provides the missing teachings or suggestions with respect to claim 1. Thus, the combination of the combination of Fielding, Brooks, Alessi, Schmidl, and Quigley does not render claim 1 obvious. Dependent claims 8 and 9 are likewise not rendered obvious by the combination of the combination of Fielding, Brooks, Alessi, Schmidl, and Quigley for the same reasons as claim 1 from which they respectively depend and further in view of their own respective features. Accordingly, Applicants respectfully request that the rejection of claims 8 and 9 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Fielding in view of Brooks and in view of Alessi and in view of Schmidl and in further view of Kin

Claims 11-13 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fielding in view of Brooks and in view of Alessi and in view of Schmidl and in further view of "Turbo-coded OFDM System for a Mobile Satellite Broadcasting System" to Kim (herein "Kim"). Applicants respectfully traverse the rejection and provide the following arguments to support patentability.

As discussed above, the combination of Fielding, Brooks, and Schmidl does not teach or suggest each and every feature of claim 1. Kim does not provide the missing teachings or suggestions with respect to claim 1 nor does the Office Action allege that Kim provides the missing teachings or suggestions with respect to claim 1. Thus, the combination of the combination of Fielding, Brooks, Schmidl, and Kim does not render claim 1 obvious. Dependent claims 11-13 is likewise not rendered obvious by the combination of the combination of Fielding, Brooks, Schmidl, and Kim for the same reasons as claim 1 from which they respectively depend and further in view of their own respective features. Accordingly, Applicants respectfully request that the rejection of claims 11-13 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Brooks in view of Alessi

Claims 18-21 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Brooks in view of Alessi. Applicants respectfully traverse the rejection and provide the following arguments to support patentability.

The combination of Brooks and Alessi does not teach or suggest each and every feature of claim 1. For example, as discussed above in regards to claim 1, Brooks does not teach or suggest at least the features of "a turbo decoder coupled to the burst

demodulator and the DOCSIS MAC for decoding the demodulated data from the burst demodulator and sending the decoded data to the DOCSIS MAC" as recited by claim 18. Alessi does not provide the missing teachings or suggestions with respect to claim 18, nor does the Office Action allege that Alessi provides the missing teachings or suggestions with respect to claim 18 to render claim 18 obvious. Therefore, the Office Action fails to disclose a *prima facie* case of obviousness. Dependent claims 19-21 are likewise not rendered obvious by the combination of Brooks and Alessi for the same reasons as claim 18 from which they respectively depend and further in view of their own respective features. Accordingly, Applicant respectfully requests that the rejection of claims 18-21 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Quigley in view of Alessi

Claims 14-17 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Quigley in view of Alessi. Applicants respectfully traverse the rejection and provide the following arguments to support patentability.

For the reasons to be discussed below, the combination of Quigley and Alessi does not teach or suggest each and every feature of claim 14. For example, the combination of Quigley and Alessi does not teach or suggest at least the features of "turbo decoding the QPSK output signal" followed by "decoding the turbo decoded output signal by a Reed-Solomon (RS) decoder" as recited by claim 14. In other words claim 14 recites two separate decoding steps. A first decoding step of "turbo decoding the QPSK output signal" followed by a second decoding step of "decoding the turbo

decoded output signal by a Reed-Solomon (RS) decoder." Therefore, the Office Action fails to disclose a *prima facie* case of obviousness.

Quigley discloses a "burst receiver" in FIG. 9. According to Quigley, incoming radio frequency (IN RF) signals are introduced on a line 460 to a downconvert stage 514 which converts the signals to an intermediate frequency. The signals then pass to a demodulator 448 which recovers the modulated data. The signals from the data demodulator 448 are introduced to an equalizer 453.

(*see*, Quigley, col. 27, lines 10-17).

The signals from the equalizer 453

are introduced to a de-randomizer 275. The de-randomizer 275 de-interleaves the signals which have been previously interleaved at the subscriber modem 12 to prevent data from the subscriber from being lost as a result of noise in the cable. The de-randomized signals then pass to a Reed-Solomon (RS) decoder 524 which corrects for errors in the packets. The signals then pass through MAC 60 ... to an output line 526.

(*see*, Quigley, col. 27, lines 49-57).

Thus, Quigley at most only teaches or suggests a single decoder, namely the Reed-Solomon (RS) decoder 524 in the burst receiver of FIG. 3.

From the discussion above in regards to claim 1, Alessi merely discloses a type of error correction code, namely a TPC code. Hence, combining the Reed-Solomon (RS) decoder 524 of Quigley with the TPC of Alessi at most teaches or suggests ***a single TPC decoder***. In contrast, claim 14 recites more than one decoding step. A first decoding step of "turbo decoding the QPSK output signal" followed by a second decoding step of "decoding the turbo decoded output signal by a Reed-Solomon (RS) decoder." Clearly, the aforementioned combination of Quigley and Alessi does not teach or suggest "turbo decoding the QPSK output signal" followed by "decoding the turbo decoded output signal by a Reed-Solomon (RS) decoder" as recited by claim 14. In other words, there is

no teaching or suggestion in neither Quigley nor Alessi to combine the Reed-Solomon (RS) decoder 524 with the TPC of Alessi to produce more than one decoder, the combination of Quigley and Alessi at most teaches or suggests a single decoder.

Hence, the combination of Quigley and Alessi does not teach or suggest each and every feature of claim 14. Therefore, the Office Action fails to disclose a *prima facie* case of obviousness. Dependent claims 15-17 are likewise not rendered obvious by the combination of Quigley and Alessi for the same reasons as claim 14 from which they respectively depend and further in view of their own respective features. Accordingly, Applicants respectfully request that the rejection of claims 14-17 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Other Matters

Applicants filed a Change of Correspondence Application (PTO/SB/122) on March 7, 2007 requesting the Correspondence Address for this Application be changed to the address associated with Sterne, Kessler, Goldstein & Fox PLLC, Customer Number 26111. However, the Office Action was received by Christie, Parker & Hale, LLP on December 31, 2007. Applicants have notified Mr. David Payne, a SPE for Art Unit 2611, on May 27, 2008 of this discrepancy. The time to respond to the Office Action dated December 28, 2007 has been reset on June 26, 2008 according to PAIR. For convenience of the Examiner, Applicants are resubmitting, herewith, a Change of Correspondence Application that is substantially similar to the Change of Correspondence Application previously filed on March 7, 2007.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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